No. 695,780. Patented Mar. 18, 1902.

J. AUSTIN.

WAGON GEAR.

(Application filed May 17, 1901.)

(No Model.) 3 Sheets—Sheet 1.

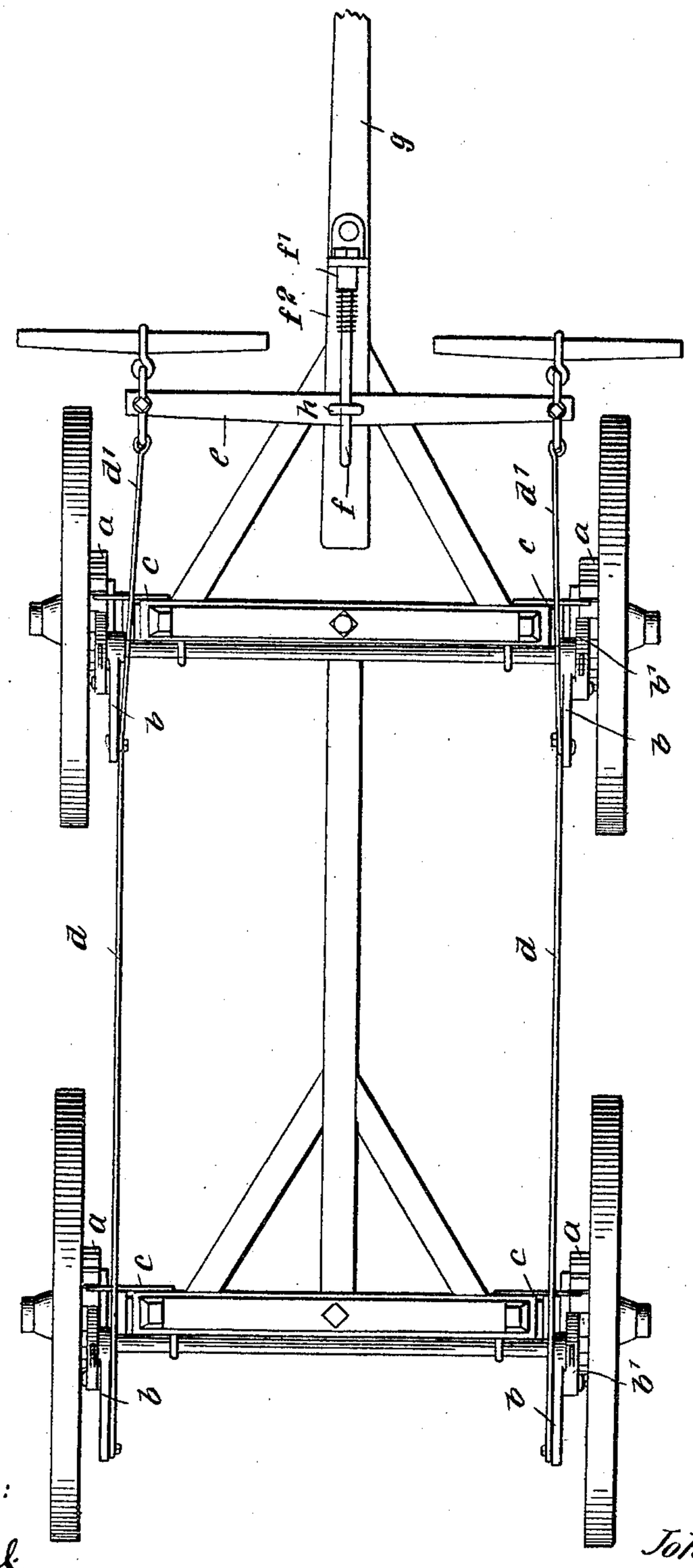

Fig. 1.

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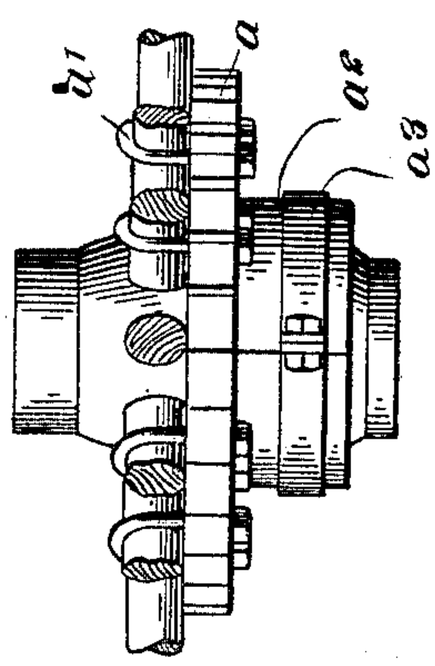

Fig. 3.

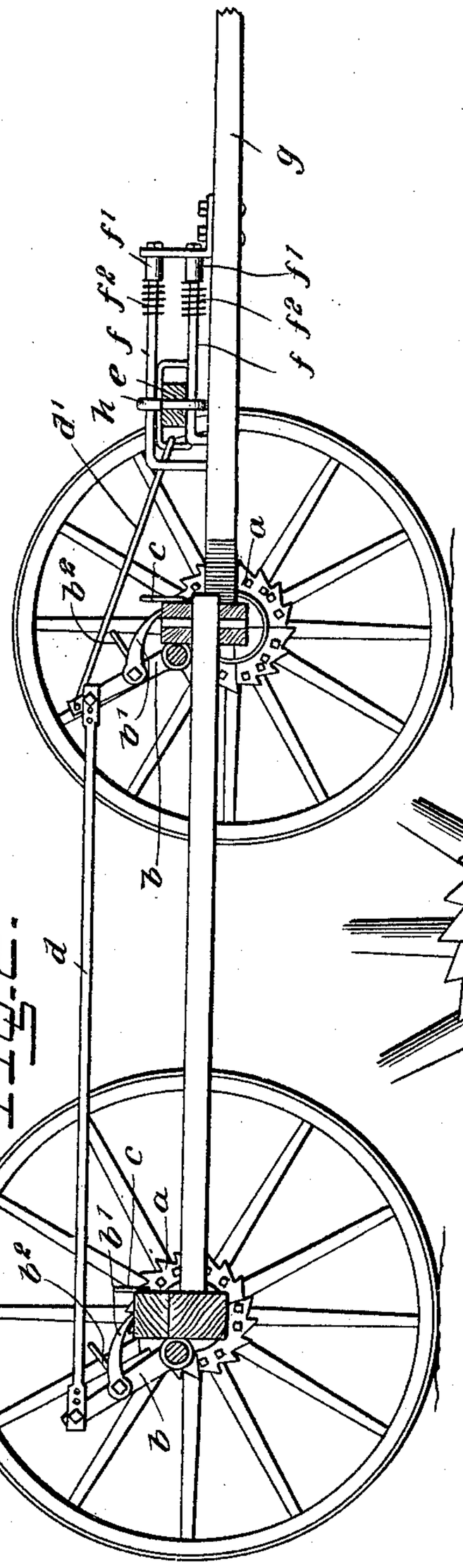

Fig. 2.

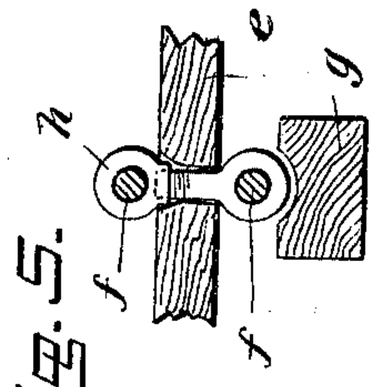

Fig. 5.

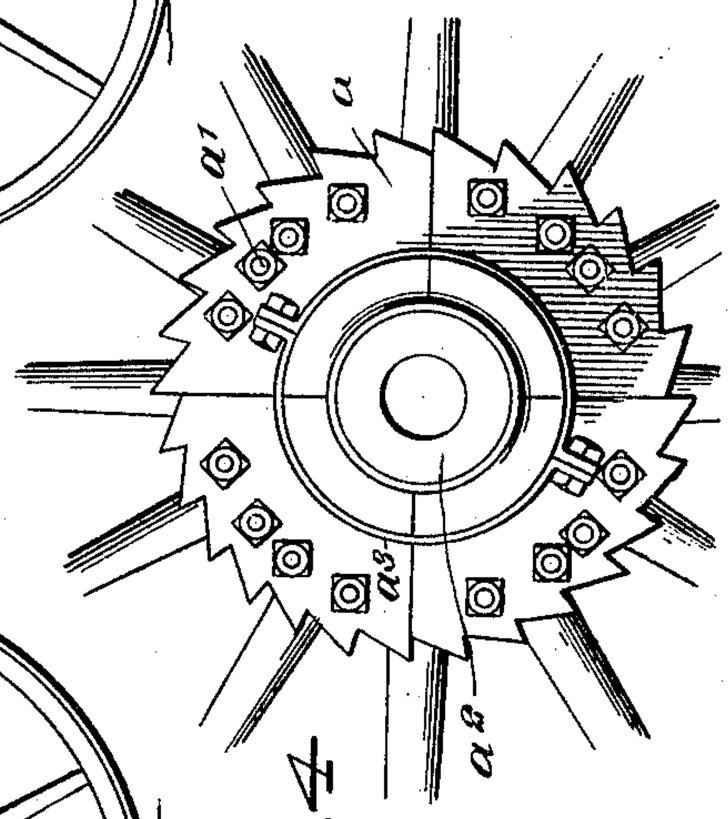

Fig. 4.

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(Application filed May 17, 1901.)

(No Model.) 3 Sheets—Sheet 3.

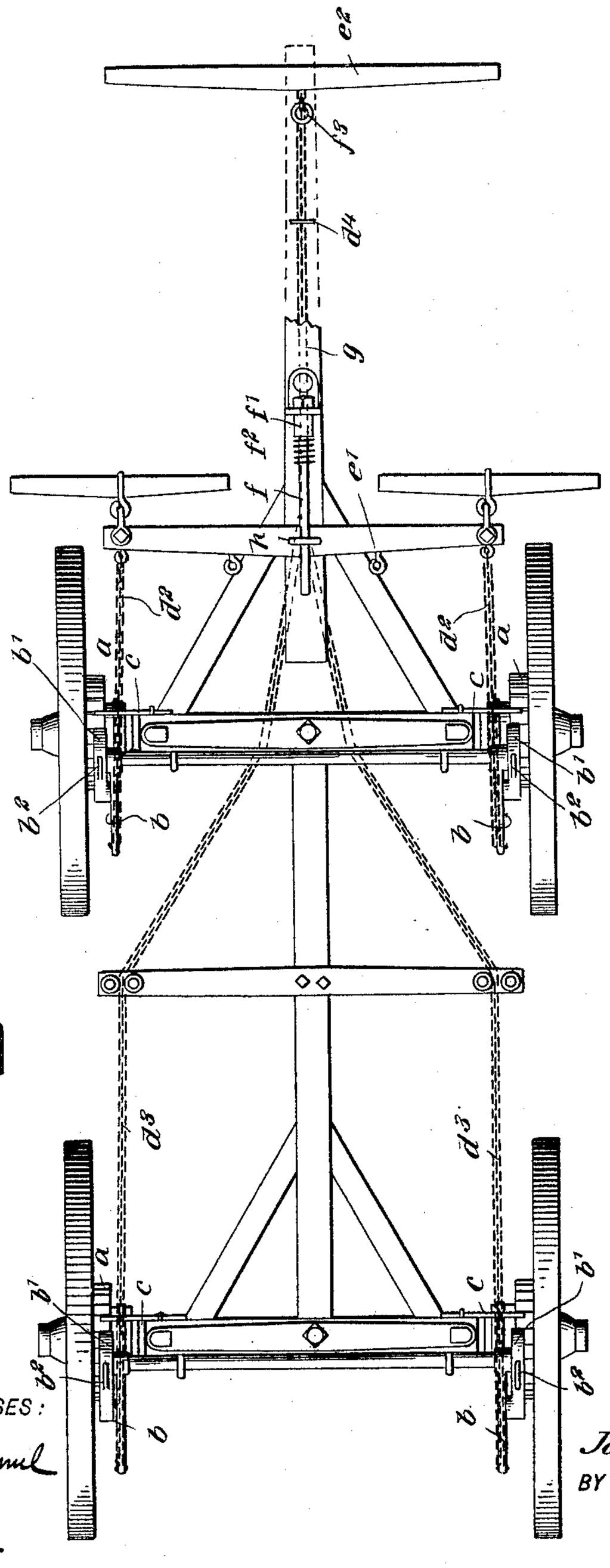

Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN AUSTIN, OF PITKIN, COLORADO.

WAGON-GEAR.

SPECIFICATION forming part of Letters Patent No. 695,780, dated March 18, 1902.

Application filed May 17, 1901. Serial No. 60,712. (No model.)

To all whom it may concern:

Be it known that I, JOHN AUSTIN, a citizen of the United States, and a resident of Pitkin, in the county of Gunnison and State of Colorado, have invented a new and Improved Wagon-Gear, of which the following is a full, clear, and exact description.

This invention relates to mechanism for facilitating the starting movement of wagons and other vehicles; and it consists, briefly stated, in a gear connected directly with the team and arranged to act directly on the wheels, so as to impart turning movement thereto, after which the gear is automatically thrown out of action and the vehicle is drawn in the usual manner.

This specification is a specific description of two forms of the invention, while the claims are definitions of the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the invention. Fig. 2 is a longitudinal section thereof. Fig. 3 is a plan view showing the manner of attaching the ratchet-wheels to the vehicle-wheels. Fig. 4 is a detail view of the ratchet-wheels. Fig. 5 is a detail view of the guide-pin on the doubletree, and Fig. 6 is a plan view of a modified form of the invention.

Referring to Figs. 1 to 5, the invention is applicable to a vehicle of any sort. I have here shown a four-wheeled vehicle. To each of the wheels is fastened a ratchet-wheel made up of a number of sections a, secured by U-bolts a' to the spokes of the wheels and having segmental flanges a^2, matching with each other to form a hub, around which is fastened a band a^3, whereby securely to bind the various parts together. Suitably mounted on each axle of the vehicle or on a part adjacent thereto are levers b, which levers are two for each axle and carry pawls b', which work, respectively, with the ratchet-wheels. By throwing the levers b forwardly from the position shown in Fig. 2 the pawls b' will engage the ratchet-wheels and turn them forwardly. As the pawls reach the end of their forward movement they engage their spurs b^2 with transverse arms c, fastened to the axles of the vehicle. These spurs b^2 being projected diagonally from the pawls or dogs b' tend to raise the pawls automatically out of engagement with the ratchet-wheels, and the parts remain in this position. The arms or levers b are connected together in longitudinal pairs by rods d, and the front arms b are connected to the doubletree e by means of links d'. The doubletree e is arranged to move between two guide-rods f, mounted on a tongue g, and extending longitudinally therewith. Fastened in the doubletree e and sliding on the rods f is a double-eyed guide-pin h, which pivotally mounts this doubletree and at the same time arranges it so that it may have a limited movement independently and longitudinally of the tongue g. Each guide-rod f carries at its front end a stop f' and an expansive spring f^2, these parts serving to limit the forward movement of the doubletree and at the same time to cushion the engagement of the guide-pin with the stops. The arms c further serve to sustain the levers b as they are thrown forwardly when the vehicle has been started. When a vehicle is thus equipped, if it is desired to start the vehicle the parts should be thrown backward in the position shown in Fig. 2. This may be done manually, or a hand-lever with suitable connections may be provided for the purpose. The pawls b' should then be thrown down into engagement with the ratchet-wheels on the vehicle-wheels. As the team is started the doubletree e will be pulled forward independently of the tongue g and the other parts of the vehicle. This will swing the levers b forward and impart a turning movement to the ratchet-wheels, and the forward movement of the vehicle will thus be started. The movement of the doubletree e continues until it is arrested by the stops f', and then the strain of the team will be communicated directly to the tongue g and the vehicle will be pulled forward in the usual manner. As the levers b perform their functions they strike their spurs b^2 on the projections c, and thereby the pawls b' are automatically thrown out of action.

Fig. 6 shows the application of the invention to a four-horse team. In this form the parts b, b', b^2, and a are the same as those previously described; but the levers b on the front axle are connected by chains d^2 to the

rear doubletree e'. This is arranged to slide in guide devices the same as those previously described. The rear levers b have chains d^3 attached, and these chains are led forward through suitable guideways to the doubletree e^2 of the leading horses. The chains d^3 are provided with a stop-bar d^4 and they run through a guide-ring f^3, fastened to the tongue g of the vehicle. These parts d^4 and f^3 allow a limited movement of the chains d^3 independently of the tongue. The operation of the parts is the same, excepting, of course, that the tongue-horses act to operate the front pawls or dogs and the leaders operate the rear dogs.

Various changes in the form, proportions, and minor details of my invention may be resorted to without departing from the spirit and scope of my invention. Hence I consider myself entitled to all such variations as may lie within the scope of my claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a vehicle, of a number of sector-like sections fitting the hub and having flanges extending alongside of the spokes, said flanges being ratcheted on their outer edges and matching together to form a ratchet-wheel, means passing through the flanges and engaging the spokes of the wheel to fasten them in place, a band passed over the hub parts of the said sections also to hold them in place, a pawl adapted to engage the ratchet-wheel, and means carrying the pawl, said means being in connection with the draft devices, to be actuated therefrom, for the purpose specified.

2. The combination with a wheeled vehicle, of ratchet-wheels fastened to the vehicle-wheels coincident with the axes thereof, levers mounted on the frame respectively, adjacent to the ratchet-wheels, pawls carried by the levers and working with the ratchet-wheels so that upon a forward movement of the levers the ratchet-wheels are turned in the same direction, connections between the levers at the front and rear axles, a whiffletree mounted to slide on the tongue of the vehicle, and connections between the ends of the whiffletree and the levers of the front axle, the said ratchet-wheels being each formed of sector-like sections fitting the hub of the vehicle-wheel and having flanges extending alongside of the spokes, the outer edges of the flanges being ratcheted, and means passing through the flanges and engaging the spokes of the vehicle-wheel to fasten the ratchet-wheel in place.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN AUSTIN.

Witnesses:
JOSEPH S. JAFFA,
S. BOYCE.